UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,737	10/30/2003	Min-Jung Kim	P-0609	6181

34610 7590 07/21/2009
KED & ASSOCIATES, LLP
P.O. Box 221200
Chantilly, VA 20153-1200

EXAMINER	
LIM, STEVEN	

ART UNIT	PAPER NUMBER
2617	

MAIL DATE	DELIVERY MODE
07/21/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/695,737	Applicant(s) KIM ET AL.	
	Examiner STEVEN LIM	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 April 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4,6,7,11-17,19,20 and 24-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4,6,7,11-17,19,20 and 24-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

   1. Determining the scope and contents of the prior art.
   2. Ascertaining the differences between the prior art and the claims at issue.
   3. Resolving the level of ordinary skill in the pertinent art.
   4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1, 2, 4, 6, 7, 11, 12, 15-17, 19, 20, 24, 27, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiramatsu et al. (US 6600933) in view of Ohashi (US 5799245) and Eastmond et al. (US 6088337) and further in view of Odenwalder et al. (US 6795508) and Weerackody et al. (US 5689439).

4. Regarding Claims 1, 6, 16, and 19, Hiramatsu et al. discloses a antenna selection system including transmitting a data block through a first one of a plurality of selected antennas (Col. 1, Lines 25-30, Fig. 1), receiving a first signal indicating through a check that an error occurred during transmission or reception of the data block after

the data block is sent (Col. 6, Lines 41-54), selecting a second one of the plurality of antennas in response to the first error signal and retransmitting the data block through the second one of the plurality of antennas (base station performs antenna change control, Col. 6, Lines 41-54), however Hiramatsu et al. fails to disclose transmitting a second data block through a second one of the plurality of antennas, the first error signal received after transmission of the second data block, the first data block is retransmitted in consecutive sequence with the second data block transmitted by the second one of the plurality of antennas, a sequential antenna selection and interruption of sequential selection of the plurality of antennas preventing the first data block from being retransmitted through the first one of the plurality of antennas; resuming sequential selection of the plurality of antennas after the data block is retransmitted through the second one of the plurality of antennas and transmitting additional data blocks through the sequentially selected antennas.

5. In an analogous art, Odenwalder et al. discloses transmitting a second data block through a second one of the plurality of antennas (first and second group of code channels are transmitted at the same time, Col. 4, Line 67- Col. 5, Line 4), which enables a reduction of a delay in processing because the second data does not depend on the first data.

6. In an analogous art, Ohashi discloses a data block is retransmitted in consecutive sequence with an additional data block initially transmitted by the second one of the plurality of antennas (data transmitted and retransmission needed and antennas switched, Col. 12, Line 43- Col. 13, Line 27); resuming sequential selection of

the plurality of antennas after the data block is retransmitted through the second one of the plurality of antennas (antenna selection returns to initial state of selecting first antenna, Col. 11, Line 47 - Col. 12, Line 5) and transmitting additional data blocks through the sequentially selected antennas (data resumes to be transmitted and when retransmission is further needed antennas are again switched, Col. 12, Line 43- Col. 13, Line 27), which enables the best antenna to be used in transmitting data.

7. In an analogous art, Weerackody et al. discloses a sequential selection of antennas including an interruption of sequential selection of the plurality of antennas preventing the first data block from being retransmitted through the first one of the plurality of antennas (Col. 2, Lines 12-25), which enables the use of antenna that has not failed.

8. In an analogous art, Eastmond et al. discloses using a consecutive sequence of additional data (Col. 9, Lines 33-36), which enables proper reassembly of data blocks (Col. 9, Lines 33-36).

9. It would have been obvious to one having ordinary skill in the art at the time of invention was made to send the second data in order to increase processing time in not waiting for a negative acknowledgement.

10. It would have been obvious to one having ordinary skill in the art at the time of invention was made to receive the first error signal after the transmission (as taught by Hiramatsu) of the second data block when the data is transmitted at the same time (as taught by Odenwalder) in order to allow the system to not wait for a negative acknowledgement.

11. It would have been obvious to one having ordinary skill in the art at the time of invention was made to use a consecutive sequence of additional data to ensure proper reassembly of data blocks (Col. 9, Lines 33-36).

12. It would have been obvious to one having ordinary skill in the art at the time of invention was made to interrupt the selection of the antennas and to use the second antenna to allow the retransmission with an antenna that has not received an error.

13. It would also have been obvious to one having ordinary skill in the art at the time of invention was made to retransmit data, resume antenna selection, and to transmit the data through the antennas sequentially in order to allow the best antenna to be used for transmitting data.

14. Regarding Claim 2, Hiramatsu et al. further discloses the first error signal indicates whether a receiver correctly received the first data block transmitted through the first one of the plurality of antennas (communication terminal sends to the base station a request for retransmission, Col. 6, Lines 41-54).

15. Regarding Claim 4, Hiramatsu et al. discloses receiving a response signal from the receiver however, Hiramatsu et al. fails to disclose the first error signal is a non-acknowledgement signal transmitted from a receiver.

16. In an analogous art, Eastmond et al. discloses the first error signal is a non-acknowledgement signal transmitted from a receiver (transmit NAK, Col. 5, Lines 56-57), which enables a standard ARQ system.

17. It would have been obvious to one having ordinary skill in the art at the time of invention was made to return a non-acknowledgement signal in order to follow standard

operations of an ARQ system which is disclosed as in use by Hiramatsu et al. and Eastmond et al.

18. Regarding Claim 7, Hiramatsu et al. further discloses an antenna selection system including transmitting a data block through a first one of a plurality of selected antennas (Col. 1, Lines 25-30, Fig. 1), receiving a signal indicating that an error occurred during transmission or reception of the data block (Col. 6, Lines 41-54), selecting one of the plurality of antennas in response to the first error signal and retransmitting the data block through other antennas (base station performs antenna change control, Col. 6, Lines 41-54), however Hiramatsu et al. fails to disclose performing the same for a second error signal and transmitting to a third antenna.

19. It would have been obvious to one having ordinary skill in the art at the time of invention was made to perform the same process between a first and second antenna as for a second and third antenna thus including a second error signal and transmitting to another antenna in order to account for antenna diversity systems that include more than two antennas.

20. Regarding Claim 11, Hiramatsu et al. further discloses transmission and retransmission of the data block are downlink transmissions (Col. 1, Lines 25-30).

21. Regarding Claim 12, Hiramatsu et al. discloses transmission and retransmission of the data block occurs through a mobile communication system (Col. 3, Lines 30-34).

22. Regarding Claim 15, Hiramatsu et al. further discloses the first error signal is received based on an ARQ from a receiver (ARQ controls, Col. 11, Lines 38-40).

23. Regarding Claim 17, Hiramatsu et al. further discloses selecting the multiple antennas including the first antenna and the second antenna said selection taking place before the first response signal is checked (Terminal transmits messages to base station and base station sends messages to terminal and after retransmission request then antenna change control is enacted, Fig. 16, Item C).

24. Regarding Claim 20, Hiramatsu et al. further discloses an antenna selection system including transmitting a data block through a first one of a plurality of selected antennas (Col. 1, Lines 25-30, Fig. 1), receiving a signal indicating that an error occurred during transmission or reception of the data block (Col. 6, Lines 41-54), selecting one of the plurality of antennas in response to the first error signal and retransmitting the data block through other antennas (base station performs antenna change control, Col. 6, Lines 41-54), however Hiramatsu et al. fails to disclose performing the same for a second error signal and transmitting to a third antenna.

25. It would have been obvious to one having ordinary skill in the art at the time of invention was made to perform the same process between a first and second antenna as for a second and third antenna thus including a second error signal and transmitting to another antenna in order to account for antenna diversity systems that include more than two antennas.

26. Regarding Claim 24, Hiramatsu et al. further discloses transmission and retransmission of the data block are downlink transmissions (Col. 1, Lines 25-30).

27. Regarding Claim 27, Hiramatsu et al. further discloses the first error signal is received based on an ARQ from a receiver (ARQ controls, Col. 11, Lines 38-40).

28. Regarding Claim 28, Hiramatsu et al. discloses receiving a response signal from the receiver however, Hiramatsu et al. fails to disclose the first error signal is a non-acknowledgement signal transmitted from a receiver.

29. In an analogous art, Eastmond et al. discloses the first error signal is a non-acknowledgement signal transmitted from a receiver (transmit NAK, Col. 5, Lines 56-57), which enables a standard ARQ system.

30. It would have been obvious to one having ordinary skill in the art at the time of invention was made to return a non-acknowledgement signal in order to follow standard operations of an ARQ system which is disclosed as in use by Hiramatsu et al. and Eastmond et al.

31. Claims 13, 14, 25, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiramatsu et al. (US 6600933) in view of Ohashi (US 5799245) and Eastmond et al. (US 6088337) and further in view of Texas Instruments (May 1999, Open Loop Downlink Transmit Diversity for TDD, TSG-RAN WG1 meeting #5), Odenwalder et al. (US 6795508) and Weerackody et al. (US 5689439).

32. Regarding Claim 13, Hiramatsu et al. discloses performing transmission diversity in a WCDMA system (Col. 1, Lines 10-17), however Hiramatsu et al. fails to disclose an open loop transmit diversity technique is used to transmit data in the mobile communication system.

33. In an analogous art, TI discloses an open loop transmit diversity technique is used to transmit data in the mobile communication system (Page 1), which enables the system to follow standards in place formed by 3GPP.

34. It would have been obvious to one having ordinary skill in the art at the time of invention was made to perform the transmission using open loop transmit diversity in a WCDMA system in order to follow standards in place formed by 3GPP.

35. Regarding Claim 14, Hiramatsu et al. discloses performing transmission diversity in a WCDMA system (Col. 1, Lines 10-17), however Hiramatsu et al. fails to disclose the open loop transmit diversity technique is a TSTD technique.

36. In an analogous art, TI discloses the open loop transmit diversity technique is a TSTD technique (Page 1), which enables the system to follow standards in place formed by 3GPP.

37. It would have been obvious to one having ordinary skill in the art at the time of invention was made to perform the transmission using open loop transmit diversity in a WCDMA system with TSTD in order to follow standards in place formed by 3GPP.

38. Regarding Claim 25, Hiramatsu et al. discloses performing transmission diversity in a WCDMA system (Col. 1, Lines 10-17), however Hiramatsu et al. fails to disclose an open loop transmit diversity technique is used to transmit data in the mobile communication system.

39. In an analogous art, TI discloses an open loop transmit diversity technique is used to transmit data in the mobile communication system (Page 1), which enables the system to follow standards in place formed by 3GPP.

40. It would have been obvious to one having ordinary skill in the art at the time of invention was made to perform the transmission using open loop transmit diversity in a WCDMA system in order to follow standards in place formed by 3GPP.

41. Regarding Claim 26, Hiramatsu et al. discloses performing transmission diversity in a WCDMA system (Col. 1, Lines 10-17), however Hiramatsu et al. fails to disclose the open loop transmit diversity technique is a TSTD technique.

42. In an analogous art, TI discloses the open loop transmit diversity technique is a TSTD technique (Page 1), which enables the system to follow standards in place formed by 3GPP.

43. It would have been obvious to one having ordinary skill in the art at the time of invention was made to perform the transmission using open loop transmit diversity in a WCDMA system with TSTD in order to follow standards in place formed by 3GPP.

Response to Arguments

Applicant's arguments filed 4/21/2009 have been fully considered but they are not persuasive. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413,

208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Regarding applicant's argument that Odenwalder discloses transmitting through antennas at the same time, Examiner disagrees because the reference discloses signals are switched between antennas and a second data block (full Walsh code) is transmitted through a second antenna after a transmission through the first antenna (Col. 3, Lines 14-19, 54-67 and Col. 4, Lines 63-67) which meets the limitations of the claims as broadly interpreted. Regarding applicant's argument that Ohashi fails to disclose the first data block is retransmitted in consecutive sequence with a second data block transmitted by the second antenna preventing selection of the first antenna for transmission of the first data block and that the reference discloses transmitting through the antenna that initially transmitted the error, Examiner disagrees because the limitation as broadly claimed and interpreted is disclosed by Ohashi as switching antennas, interpreted to be the same as applicant's claimed transmitting the first and second data blocks through a second antenna, when retransmission of data is required thus using a different antenna than the antenna initially used for transmitting data and continuing to transmit through that antenna until a antenna switch requiring factor is detected (Col. 8, Lines 37-40, Col. 12, Lines 43-65). Regarding applicant's arguments towards claim 6, Examiner disagrees for the same reasons given above. Therefore the claims as broadly interpreted are disclosed by the references above in the Final Rejection.

.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEVEN LIM whose telephone number is (571)270-1210. The examiner can normally be reached on Mon-Thurs 9:00am-4:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on (571)272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/S. L./
Examiner, Art Unit 2617

/Lester Kincaid/
Supervisory Patent Examiner, Art Unit 2617